BOGNOR URBAN DISTRICT.

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH,

AND THE REPORT OF THE

CLIMATOLOGICAL SOCIETY,

FOR THE YEAR 1908.

To the Chairman and Members of the Bognor Urban District Council.

Gentlemen,

I beg to lay before you my Nineteenth Annual Report on the health and sanitary condition of the Urban District of Bognor for the year ended 31st December, 1908.

The area of the District is 865 acres and contains about 1773 inhabited houses. During the last five years the increase in the number of inhabited houses has been considerable, viz:

In 1904 there were 1443; in 1905, 1531; in 1906, 1586; in 1907, 1625; in 1908, 1773.

Eighty-three plans of new buildings were approved by the Council. Forty-one houses were erected during the year, and eleven are in course of erection.

The population estimated to the 30th of June, 1908 is 7685.

The gross number of deaths during the year was 69, viz: 31 males and 38 females, and were distributed over the twelve months as follows:—

	Males.	Females.	Total.		Males.	Females.	Total.
January	0	5	5	July	1	1	2
February	1	2	3	August	4	2	6
March	5	3	8	September	2	5	7
April	3	7	10	October	4	2	6
May	3	6	9	November	2	5	7
June	3	0	3	December	3	0	3
					31	38	69

Included in this number are four deaths which occurred in Public Institutions in the district.

I have received from the Medical Officer of Health for Chichester the names of six Bognor residents who died in the Chichester Infirmary, Asylum or Workhouse during the year. These deaths in accordance with the instructions of the Local Government Board (see Note on Table I) are not included in the figures used in arriving at the death rate of the District, but they are included in Table IV which deals with deaths at the various ages of residents whether occurring in or beyond the District.

I am very pleased to be able to report that the estimated death rate is the lowest recorded during the nineteen years I have had the honour to be your Medical Officer of Health, namely 8.9 per 1000.

The Total number of deaths, and the death rates since the increase of the area of the district which took place on 1st October, 1900 are as follows:—

	Total.	Rate.
1901	66	10.5
1902	80	12.4
1903	76	11.4
1904	82	11.9
1905	71	10.0
1906	66	9.0
1907	75	10.0
1908	69	8.9

The various ages at which death occurred during the year under report were as follows:—

Under 1 year	10
1 year and under 5 years	0
5 years and under 15 years	2
15 years and under 25 years	3
25 years and under 65 years	17
65 years and under 80 years	25
80 years and over	12
	69

The ages of death of those of 80 years and upwards were as follows:—

2 at 80; 1 at 81; 3 at 82; 1 at 84; 2 at 86; 2 at 88; 1 at 89

The chief causes of death were as follows:—

Diphtheria	... ...	1	Diarrhœa	... ...	2
Enteritis	... ...	2	Pulmonary Tuberculosis	...	5
Cancer	... ...	5	Bronchitis	... ...	7
Pneumonia	... ...	1	Premature Birth	... ...	2
Heart diseases	... ...	11	Accidents	... ...	2
Senile decay	... ...	13	Kidney diseases	... ...	3
Influenza	... ...	1	All other causes	... ...	14

One of the deaths from accident was due to shock following severe burns and the other was due to exhaustion following fracture of the thigh in a female aged 78 years.

During the year there were, as stated above, 10 deaths of infants under 1 year of age, which gives an infantile mortality rate of 1.3 per 1,000 general population, and 82.6 per 1,000 births registered.

Under the Infectious Diseases Notification Act, 1889 adopted by your Council in 1891, I have received 33 Certificates, viz:—Scarlet Fever 17; Diphtheria 7; Enteric Fever 2; Erysipelas 7

The above notified cases were spread over the twelve months as follows:—

	Scarlet Fever.	Diphtheria.	Enteric Fever.	Erysipelas.
January	3			
February	1			
March	4	2		
April	3			
May	4			
June				4
July				
August				1
September	2	3	1	
October			1	
November				1
December		2		1

Seven of these cases, namely four of Diphtheria and three of Scarlet Fever, occurred in a Public Institution in the Town.

It is satisfactory to record that there were five cases less notified than during the year 1907. Only one case terminated fatally, which gives an average death rate from notifiable diseases of 0.1 per 1,000 estimated population.

The two cases of Enteric Fever occurred in children, members of the same family; they were carefully isolated and treated in their own home; they both recovered and there was no further spread of the disease. The drainage of the house in which these cases occurred was very defective. This was probably the cause of the outbreak. The defects were immediately rectified.

Five of the cases of Scarlet Fever were removed to the Isolation Hospital where they all recovered. During the previous five years the total numbers of all cases notified to me were as follows:—

1903, 26; 1904, 35; 1905, 34; 1906, 35; 1907, 38.

The number of births registered in the District was 121, viz:—60 males and 61 females.

This gives a birth rate of 15.7 per 1,000 estimated population.

The births were as follows, viz:—

	Males.	Females.	Total.		Males.	Females.	Total.
January	5	8	13	July	6	10	16
February	3	4	7	August	6	4	10
March	5	6	11	September	2	8	10
April	6	3	9	October	8	3	11
May	5	4	9	November	2	4	6
June	7	5	12	December	5	2	7
					60	61	121

The figures for the previous five years were as follows:—

	Males.	Females.	Total.	Rate.
1903	64	54	118	17.7
1904	75	62	137	19.9
1905	59	59	118	16.7
1906	52	79	131	18.0
1907	61	72	133	17.7

The housing accommodation for the working classes is adequate and fit for habitation.

The water supply of the Town is ample in quantity and still maintains its high standard of purity as shown by the accompanying report. It is drawn from deep wells at the foot of the Downs, about 7 miles distant, where there is a pumping station which fills a covered service reservoir on the side of the hill, from which the water falls by gravitation to the town.

The milk shops, dairies and cowsheds, have been inspected from time to time and found generally in a cleanly and satisfactory condition. The milk supply is good and is chiefly imported from the neighbouring farms.

During the year under report twelve samples of milk were taken under the Sale of Food and Drugs Act, for analysis by the Public Analyst, with the result that one conviction was obtained.

The Slaughter houses in the District have been periodically visited and found to be in a satisfactory condition.

The sewers and drains are sufficient in all parts of the district. An adequate number of ventilating shafts have been erected for the ventilation of the sewers draining the new roads at the west end of the Town. A new surface water drain has been laid in Gloucester Road, which takes the storm water across the brooks in the line of the old land drain into the Rife.

A scheme for the provision of twelve more fire hydrants in parts of the district which are becoming more thickly populated, is being carried out for the safeguard of life and property.

The Sewerage is disposed of by the water carriage system with outfall into the sea. A scheme is at present under consideration for carrying the outfall about one mile and a half further east of the Town.

During the season the house refuse is collected (in covered carts provided by the Council) twice a week, during the rest of the year it is collected once a week.

During the year there were forty nuisances reported to the Sanitary Authority; in eleven of these cases notices were served for abatement which have all been complied with; the remaining twenty-nine were abated without notice being served.

The water of one well in the district was found upon analysis to be unfit for domestic purposes and, in consequence the town water was laid on to the premises.

No injurious or offensive trades are carried on in the district.

The Public Elementary Schools are supplied with town water and are in a sanitary condition. During the summer vacation they were thoroughly cleansed and disinfected with "Formalin."

The Isolation Hospital is in progress, the adminstrative block, which was finished some two years ago, is in the meantime being used when necessary for the reception of cases. The Hospital when finished, will be sufficient to supply all the accommodation necessary for the district.

Up to the end of the year under report, only ordinary control of cases of pulmonary tuberculosis has been carried out, without any system of notification. In the cases of death from this complaint the rooms have been cleansed and disinfected by the sanitary authority or by the tenants. There is no hospital for the accommodation of these cases.

The factories on the register at the end of the year and under the supervision of the Council are five in number and are classified as follows:—

1 Steam Laundry; 1 Mineral Water Works; 1 Forage Contractor; 2 Printers.

The Workshops on the register at the end of the year were seventy-two in number and are classified as follows:—

Bakehouses	9	Harness Makers	2
Dressmakers	9	Farriers	4
Tailors	7	Watchmakers	3
Laundries	4	Cabinet Makers	2
Carpenters	11	Forage Contractors	2
Shoemakers	7	Cycle Makers	3
Coachmakers	3	Brick Makers	2
Plumbers	4		

All the above Factories and Workshops have been inspected during the year; seven defects in the sanitary accommodation were found. Five of the defects have already been remedied and the other two are in hand.

Systematic inspections of the district have been made from time to time, or as occasion required, by myself or the Sanitary Inspector. Regular monthly reports of the work have been laid before the Sanitary Committee. Besides this general supervision I have paid fifty-two special visits in cases where required.

The scavenging and watering of the Streets under the control of the Council have been thoroughly and systematically carried out. Water standards have been placed in various parts of the town for the convenience of watering the Streets.

The roads and streets under the control of the Council are now in a very good state of repair. I am glad to note that Nyewood Lane which has been for a long time in a very unsatisfactory condition, is shortly to be taken over by the Council when satisfactory arrangements have been made with the owners of the frontages. This will prove a great boon to the residents in Nelson Road and Tennyson Road; it will also open up an easy means of access to the Sports Ground.

The underground lavatory at the pier has been enlarged by the addition of five w.c.'s, five lavatory basins and four urinals. The ventilation is at present not quite satisfactory, but the matter is under the consideration of the Sanitary Committee and will shortly be made efficient.

New lavatories are also contemplated to cope with the requirements of the increasing influx of excursionists during the summer months.

I enclose Tables I, II, III, IV and V specially required by the Local Government Board, and I take this opportunity of thanking the members of the Sanitary Committee and the Inspector of Nuisances for the courtesy and help they have extended to me during the year.

I beg to remain,

Your obedient Servant,

W. CONWAY COOKE,

Associate of King's College, London.

Fell. Royal Institute of Public Health.

Medical Officer of Health.

Bognor,

5th February, 1909.

45, Great Tower Street,
London, E.C.,
March 2nd, 1908.

Report on a sample of Water received February 19th, 1908.

Appearance	Bright
Reaction	Alkaline
Sediment	Insufficient for Microscopical Examination

PARTS PER MILLION.

Ammonia, free and saline	a trace
,, albuminoid	0.03
Oxygen absorbed in 20 minutes	0.03
,, ,, ,, 3 hours	0.07

GRAINS PER GALLON.

Total solid matter	23.10
Consisting of	barely discolouring on ignition.
Volatilisable matter	0.98
and Non-volatilisable matter	22.12

The solid matter on a further analysis was found to contain the following basic and acid bodies :—

Silica	0.56
Alumina	0.13
Oxide of Iron, soluble	0.01
,, ,, suspended	a trace
Lime	9.56
Magnesia	0.58
Potash	0.13
Soda	1.19
Chlorine	1.60
Nitric Acid	1.43
Sulphuric Acid	0.38
Lead and Copper	None found.

The above basic and acid bodies would exist in the water combined together, in all probability, as under :—

Sodium Chloride	2.25
Potassium Chloride	0.21
Calcium Chloride	0.21
Calcium Nitrate	2.16
Magnesium Sulphate	0.58
,, Carbonate	0.81
Calcium ,, ...	15.56
Silica, Alumina, and Oxide of Iron	0.70

I pass this water as a satisfactory supply for drinking and for domestic purposes.

E. R. MORITZ.

The Bognor Urban District Council,
Bognor, Sussex.

TABLE I.

Vital Statistics of Whole District during 1908 and previous Years.

Name of District: BOGNOR URBAN SANITARY.

Year.	Population estimated to Middle of each Year.	Births.		Total Deaths Registered in the District.				Total deaths in Public Institutions in the District.	Deaths of Non-residents registered in Public Institutions in the District.	Deaths of Residents registered in Public Institutions beyond the District.	Nett Deaths at all Ages belonging to the District	
				Under 1 Year of Age.		At all ages.						
		Number.	Rate*	Number.	Rate per 1,000 Births registered.	Number.	Rate.*				Number	Rate.*
1	2	3	4	5	6	7	8	9	10	11	12	13
1898.	4694	78	14.4	14	179.4	69	13.4					
1899.	4775	80	16.7	17	212.5	71	14.8					
1900.	4856	81	16.6	14	172.8	73	15.0	6	6			
1901.	6232	108	17.3	7	64.8	66	10.5	5	5			
1902.	6439	145	22.5	14	96.5	80	12.4	5	5			
1903.	6647	118	17.7	7	59.3	76	11.4	5	5			
1904.	6854	137	19.9	17	124.0	82	11.9	1	1			
1905.	7062	118	16.7	15	127.1	71	10.0	2	2			
1906.	7269	131	18.0	11	83.9	66	9.0	3	3			
1907.	7477	133	17.7	9	67.6	75	10.0	4	4			
Averages for years 1898-1907.	6230	112.9	17.7	12.5	118.7	72.9	11.8					
1908.	7685	121	15.7	10	82.6	69	8.9	4	4	6	71	9.2

*Rates in Columns 4, 8, and 13 calculated per 1,000 of estimated population.

Area of District in acres (exclusive of area covered by water) } 865 Acres.

N.B.—Until the 1st Oct., 1900, the area of the District was 503 acres. On that date the area was increased by the addition of 362 acres.

At Census of 1901.

Total population at all ages 6180

Number of inhabited houses 1210

Average number of persons per house 5.1

1. Institutions within the District receiving sick and infirm persons from outside the District.	2 Institutions outside the District receiving sick and infirm persons from the District.
Merchant Taylors' Convalescent Home for Men.	Westhampnett Union.
Merchant Taylors' Convalescent Home for Women.	Chichester Infirmary.
Victorian Convalescent Home for Surrey Women.	Various London and Provincial Hospitals and Convalescent Homes.
Cambridge House (Children).	Various Sanatoria for the open air treatment of Pulmonary Tuberculosis.
Victoria Convalescent Home (Women).	Gralingwell Asylum situated at Westhampnett near Chichester.
Princess Mary's Memorial Home (Women).	
Scott's Memorial Home.	
Arthur's Home (Children).	
Princess Mary's Convalescent Home (Children).	
Rest Lodge.	
Maconachie Home.	
Cottage Homes.	

TABLE III.

Cases of Infectious Disease notified during the Year 1908.

Name of District: BOGNOR URBAN SANITARY.

Notifiable Disease.	At all Ages.	Total Cases removed to Hospital.
Small-pox	... ...	
Cholera	... ...	
Diphtheria (including Membranous croup)	7 ...	...
Erysipelas	7 ...	...
Scarlet Fever	17 ...	... 5
Typhus Fever	... ...	
Enteric Fever	2 ...	...
Relapsing Fever ...	... ...	
Continued Fever ...	... ...	
Puerperal Fever ...	... ...	
Plague	... ...	
Totals ...	33 ...	... 5

Bognor Isolation Hospital provided by the Bognor Urban District Council. Total available beds: 4.
Number of Diseases that can be concurrently treated: 2.

TABLE IV.

Causes of, and Ages at, Death during Year 1908.

Name of District: BOGNOR URBAN SANITARY.

Causes of Death.	Deaths at the subjoined ages of "Residents" whether occurring in or beyond the District.							Total deaths whether of Residents or non Residents in Public Institutions in the District
	All ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	
1	2	3	4	5	6	7	8	9
Small-pox	...	...	...	...	...	...	...	...
Measles	...	...	...	...	...	...	...	...
Scarlet fever	...	...	...	...	...	...	...	...
Whooping-cough ...	...	...	...	...	...	...	...	...
Diphtheria and membranous croup	1	...	...	1	...	...	...	...
Croup	...	...	...	...	...	...	...	...
Fever — Typhus ...	...	...	...	...	...	...	...	...
Fever — Enteric ...	...	...	...	...	...	...	...	...
Fever — Other continued ...	...	...	...	...	...	...	...	...
Epidemic influenza ...	...	...	...	...	...	...	...	...
Cholera	...	...	...	...	...	...	...	...
Plague	...	...	...	...	...	...	...	...
Diarrhœa	2	2	...	...	...	...	...	...
Enteritis	2	2	...	...	...	...	...	...
Puerperal fever ...	...	...	...	...	...	...	...	...
Erysipelas	...	...	...	...	...	...	...	...
Phthisis, (Pulmonary Tuberculosis)	6	...	...	...	1	5	...	...
Other tubercular diseases ...	...	...	...	...	...	...	...	...
Cancer, malignant disease ...	3	...	...	...	...	2	1	2
Bronchitis	7	1	...	...	...	...	6	...
Pneumonia	1	...	...	...	...	...	1	...
Pleurisy	...	...	...	...	...	...	...	...
Other diseases of Respiratory organs	...	...	...	...	...	...	...	...
Alcoholism—Cirrhosis of liver ...	...	...	...	...	...	...	...	...
Venereal diseases ...	...	...	...	...	...	...	...	...
Premature birth ...	2	2	...	...	...	...	...	...
Diseases and accidents of parturition	...	...	...	...	...	...	...	...
Heart diseases	10	...	...	...	...	2	8	1
Accidents	3	...	...	...	...	2	1	...
Suicides	...	...	...	...	...	...	...	...
Senile decay	13	...	...	...	...	...	13	...
Kidney diseases ...	3	...	...	...	1	1	1	...
Influenza	1	...	...	...	...	...	1	...
All other causes ...	17	3	...	...	...	10	4	1
All causes	71	10	...	1	2	22	36	4

TABLE V.

BOGNOR URBAN SANITARY DISTRICT.

INFANTILE MORTALITY DURING THE YEAR 1908.

DEATHS FROM STATED CAUSES IN WEEKS AND MONTHS UNDER ONE YEAR OF AGE.

CAUSE OF DEATH.		Under 1 week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Total Deaths under One Year.
All causes.	Certified ...	2	...	...	...	2	3	...	2	1	...	1	...	...	1	...	...	10
	Uncertified ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Common Infectious Diseases.	Small-pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Chicken-pox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Measles	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Scarlet Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Diphtheria (including Membranous Croup)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Whooping Cough ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diarrhœal Diseases.	Diarrhœa, all forms ...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	2
	Enteritis, Muco-enteritis Gastro-enteritis	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	2
	Gastritis, Gastro-intestinal Catarrh	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wasting Diseases.	Premature Birth ...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
	Congenital Defects ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Injury at Birth ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Want of Breast-milk Starvation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Atrophy, Debility Marasmus	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
Tuberculous Diseases.	Tuberculous Meningitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Tuberculous Peritonitis Tabes Mesenterica	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Other Tuberculous Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Causes.	Erysipelas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Syphilis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Rickets	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Meningitis (*Not Tuberculous*)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Convulsions ...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1
	Bronchitis	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
	Laryngitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Pneumonia ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Suffocation, overlying	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Other causes ...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
		2					3		2	1		1			1			10

Births in the year { legitimate M 58. F 59. Total: 117. / illegitimate M 2. F 2. Total: 4.

Deaths in the year { legitimate infants 8 / illegitimate infants 2

Population. Estimated to middle of 1908. **7685.**

Deaths from all Causes at all Ages 69.

Annual Report of the Medical Officer of Health for the year 1908 for the URBAN DISTRICT of BOGNOR, on the administration of the Factory and Workshop Act, 1901, in connection with

FACTORIES, WORKSHOPS, WORKPLACES AND HOMEWORK.

1.—INSPECTION.

INCLUDING INSPECTIONS MADE BY SANITARY INSPECTORS OR INSPECTORS OF NUISANCES.

Premises.	Number of		
	Inspections.	Written Notices.	Prosecutions.
Factories (Including Factory Laundries).	5	..	..
Workshops (Including Workshop Laundries).	72	..	..
Workplaces (Other than Outworkers' premises included in Part 3 of this Report).	..	..	..
Total	77		

2.—DEFECTS FOUND.

Particulars.	Number of Defects.			Number of Prosecutions.
	Found.	Remedied.	Referred to H.M. Inspector.	
Nuisances under the Public Health Acts:—				
Want of cleanliness	..	..	..	..
Want of ventilation	..	..	..	..
Overcrowding	..	..	..	..
Want of drainage of floors	..	..	..	..
Other nuisances	..	..	..	..
Sanitary accommodation — insufficient	3	2	..	..
Sanitary accommodation — unsuitable or defective	4	3	..	..
Sanitary accommodation — not separate for sexes	..	..	..	..
Offences under the Factory and Workshop Act:—				
Illegal occupation of underground bakehouse (s 101)	..	..	..	..
Breach of special sanitary requirements for bakehouses (ss. 97 to 100).	..	..	..	..
Other offences (Excluding offences relating to outwork which are included in Part 3 of this Report).	..	..	..	..
Total	7	*5		

* The two not remedied are in hand.

3.—REGISTERED WORKSHOPS.

Important classes of workshops such as workshop bakehouses, may be enumerated here.

Bakehouses	9	Harness Makers	2
Dressmakers	9	Farriers	4
Tailors	7	Watchmakers	3
Laundries	4	Cabinet Makers	2
Carpenters	11	Forage Contractors	2
Shoemakers	7	Cycle Makers	3
Plumbers	4	Brick Makers	2
Coach Makers	3		

Total number of workshops on Register .. .. **72.**

Bognor Climatological Society.

REPORT OF THE OBSERVERS FOR 1908.

ATMOSPHERIC PRESSURE at 9 a.m.—Table I. The highest reading of the barometer reduced to 32° and mean-sea level was 30·761 inches on February 6th; and the lowest 28·900 inches on December 11th. The mean pressures of the months of March, July and September were below the averages of the previous ten years for those months; the means of the other months being in excess of the averages; the figures for August and December were the same as the 10 years averages as far as the second decimals. The mean pressure of the whole year was 30·033 being 0·056 inch above the yearly average of the previous ten years.

TEMPERATURE—Table II. The monthly averages differed very slightly from the ten years average, and those for the year were almost identical with the averages for the previous ten years. The highest temperature recorded during the year was on the 1st of July, and then it was only 78¼ degrees. The mean temperature on grass for December given in the Table is the average of 30 days as on the 30th the thermometer on the grass was covered by about 12 inches of snow and registered 28 degrees against 17·1 the minimum in the box four feet above it: this shows the value of a thick mantle of snow in protecting the earth from loss of heat by radiation from the surface. On the following morning the temperature on the grass, which had been cleared from snow, was 15·1 degs; the minimum four feet above being 20·0 degrees:—

The temperature on the grass was higher than the minimum 4 feet above on 17 occasions namely on January 18th and 19th, March 25th, May 17th, July 10th and 11th, August 24th, September 4th and 28th, November 11th and 16th and December 3rd, 5th, 6th, 20th, 27th and 30th when it was covered with snow: in almost every other case there was a mist or fog at the surface of the earth.

The 4-ft. subsoil max. temperature reached the critical point of 56 degrees on the 26th of June, and the 9 a.m. temperature rose to over 56 on July 1st and remained above until October 27th.

RAINFALL.—Table III. The fact of February having an extra day this year notwithstanding, the total rainfall of the year gauged at the Bognor Climatological Station in Waterloo Square fell below the average of the previous ten years by 2·20 inches; or taking the quantity gauged by Mr. Guermonprez in Albert Road as 21·71 inches: the shortage on the same average was 2·81 inches. The quantity gauged by Mr. F. J. Neale of Outerwyke was below the average of the previous 17 years to the extent of 3·43 inches and at Lidsey according to Mr. H. Neale's figures the year's total was short of the average of the last 25 years by 3·51 inches. Over the whole of the district about Bognor the rainfall in 1908 was below the average to the amount of 3 inches in round numbers; this represents about 68000 gallons on every acre.

Mr. Guermonprez states that moisture was deposited in his guage "on 205 occasions. In "amounts less that ·001 on 15 days; between ·001 and ·01 on 49 days, leaving the number of days "on which over ·01 fell 141." As at the station in Waterloo Square any quantity above ·006 of an inch is reckoned as ·01 the number rain days registered by us and by Mr. Guermonprez are about the same, 141 + 49 = 190 which probably includes a few days of quantities below ·006.

It is rather difficult to account for the differences in the number of rain days registered at different stations: at Waterloo Square all measurable quantities of water found in the guage whether derived from rain, hail, snow or dew are noted and entered under the head of "rain-days" as required by the Meteorological Office; if all observers do not follow this practice discrepancies of course are inevitable.

BRIGHT SUNSHINE.—Table IV. Bognor may still be congratulated on being one of the brightest towns on the south coast as far as sunshine is concerned. The number of hours recorded by the Campbell-Stokes Instrument during the year being 1950 which is over 68 hours above the average of the previous ten years: and although 1908 was a leap year and consequently contained 366 days, the extra day could have added scarcely 11 hours even supposing the full amount possible for that day had been recorded.

It will be noticed that Table IV contains a column of the number of "Sun-recorded days" in each month instead of the number of sunless or dull days; the term "Sunless" is frequently a misnomer and consequently misleading, as the sunlight may be, and very often is, quite bright although a slight veil of cloud may exist which is just sufficient to prevent the sun burning its trace on the card, and thus making it appear as a "Sunless" day:—in such a case a "non-recording day" would perhaps be a more appropriate term in contradistinction to an "overcast" or "dull" day. From the total given in the table it will be seen that the bright or sun-recording days amounted to 88·8 per cent of the full year, whereas the dull and non-recording days numbered 41 only, equal to 11·2 per cent of the year.

THUNDER & LIGHTNING, &c.—Lightning only was noted on February 29th, August 4th and September 11th and 12th.

Thunder only was noted on July 12th and 14th and September 11th.

Thunder storms, i.e. lightning with thunder were observed on May 23rd, June 1st, 3rd and 4th, August 30th, September 12th and 28th, October 18th and November 13th.

On September 11th thunder began about 12.20 p.m. the wind in the higher region of the air blowing from N.W. apparently not fast. About 2 p.m. rain with hard hail fell vertically there being no current of air near the ground to disturb either the branches of trees or the leaves even; this phenomenon was repeated at 3.15. It has been generally considered that hail is always accompanied by strong wind but this case proves that there are exceptions to even this rule: certainly the air in the higher regions was electrically disturbed as evidenced by the thunder heard at the time, and the lightning seen later in the evening.

During the last four nights of June and the first two nights of July a brilliant display of Aurora or something akin to it was observed, the light on the night of the 1st of July being so bright that it was possible to read a newspaper by it until past midnight.

Mr. A. G. Thompson, desiring to be relieved of the duties of the Secretary and Treasurer, Mr. James L. Worssell, Architect, offered his services which were gratefully accepted and Mr. Worssell entered upon the duties on the 1st of January; but, owing to his professional engagements necessitating his absence from Bognor occasionally for prolonged periods, the services of Mr. Thompson have had to be requisitioned to carry on the work.

A. G. THOMPSON, C.E., F. R. Met. Soc.
H. C. L. MORRIS, M.D., F. R. Met. Soc.

TABLE I.

1908. Leap Year.	Atmospheric Pressure at 9 a.m.	Wind. Number of times observed to be blowing from.								CALM.
	Barometer reduced to 32° and mean-sea level.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	
	Averages									
January.	30·189	4	7	7	2	2	6	2	1	0
February.	30·146	6	1	1	0	0	5	5	11	0
March.	29·848	4	7	1	2	1	7	5	4	0
April.	29·933	4	12	2	3	2	0	4	3	0
May.	30·021	2	5	3	2	0	9	10	0	0
June.	30·087	2	10	2	5	0	6	5	0	0
July.	30·023	3	5	3	0	3	9	6	2	0
August.	30·008	2	4	4	1	0	9	5	6	0
September.	29·991	1	1	1	6	3	6	8	4	0
October.	30·105	0	5	11	8	4	1	1	1	0
November.	30·086	0	6	7	0	0	5	5	7	0
December.	29·957	1	10	2	3	2	8	0	3	2
Totals.		29	73	44	32	17	71	56	42	2
Average for the year	30·033									

TABLE II.

1908. Leap Year.	Average Temperature in Shade, on Grass, and Subsoil. Mean Maximum.	Mean Minimum.	Average Mean.	Mean Range.	Greatest range from min. to max. Date.	Highest. Temperature.	Highest. Date.	Lowest. Temperature.	Lowest. Date.	Mean Minimum on grass.	Lowest on. Grass.	Lowest on. Date.	Sub Soil. Average Temperature 4 ft. below Grass at 9 a.m.	Frosts. No. of times 32° and under in bot were registered.	Frosts. Do. on Grass.
	°	°	°	°	°	°		°		°	°		°		
January.	42·6	33·5	38·0	9·1	26·1 on 6th	49·9	on 27th	20·8	on 6th	29·7	13·6	on 6th	45.4	10	23
February.	47·2	37·4	42·3	9·8	13·9 ,, 14th	53·8	,, 19th	31·0	,, 2nd	32·3	24·9	,, 11th	44·6	3	17
March.	46·2	35·9	41·0	10·3	15·2 ,, 24th	52·7	,, 8th	28·4	,, 15th	31·2	22·0	,, 21st	44·5	7	18
April.	51·3	38·4	44·8	12·9	21·3 ,, 8th	58·8	,, 30th	31·9	,, 24th	33·9	21·9	,, 9th	45·8	1	14
May.	58.7	18·4	53·4	10·6	21·5 ,, 29th	71·3	,, 29th	40·2	,, 23rd	42·8	33·6	,, 11th	49·8	0	0
June.	66·1	51·7	58·9	14·4	22·1 ,, 3 & 19	78·1	,, 3rd	40·7	,, 7th	46·3	31·4	,, 7th	54·5	0	1
July.	67·5	54·6	61·0	12·9	21·7 ,, 2nd	78·5	,, 1st	47·6	,, 27th	50·2	43·0	,, 27th	57·9	0	0
August.	67·3	53·5	60·4	13·8	22·3 ,, 11th	74·3	,, 7th	45·0	,, 12th	48·2	37·8	,, 12th	59·0	0	0
September.	62·5	50·4	56·5	12·1	21·2 ,, 13th	68·6	,, 30th	38·9	,, 13th	44·2	35·4	,, 22nd	57·6	0	0
October.	59·6	50·2	54·9	9·4	18·2 ,, 28th	68·5	,, 4th	34·3	,, 25th	45·3	30·2	,, 25th	57·0	0	2
November.	52·5	42·7	47·6	9·8	20·8 ,, 10th	58·1	,, 13th	30·5	,, 10th	36·6	26·5	,, 20th	53·3	1	7
December.	46·6	37·8	42·2	8·8	25·6 ,, 30th	53·9	,, 10th	17·1	,, 30th	*34·7	*15·1	,, 31st	50·3	5	12
Average for the year.	55·7	44·5	50·1	11·2						39·6			51·6	Total 27	Total 94

*Average of 30 days only.—See text.

TABLE III.

1908. Leap Year.	Humidity. Average temperature at 9 a.m. of		Humidity. Relative Humidity Saturation=100	Rainfall. Bognor. Waterloo Square.				Bognor. Albert Road.				Felpham. Outerwyke.				Lidsey. Lidsey Lodge.			
	Dry bulb Thermometer.	Wet bulb do.		Total Rain.	Number of Rain Days.	Greatest Fall.	Date.	Total Rain.	Number of Rain Days.	Greatest Fall.	Date.	Total Rain.	Number of Rain Days.	Greatest Fall.	Date.	Total Rain.	Number of Rain Days.	Greatest Fall.	Date.
	°	°	%	Ins.		Ins.		Ins.		Ins.		Ins.		Ins.		Ins.		Ins.	
January.	37·5	32·6	85·4	1·02	15	0·78	on 7th	0·959		0·760	on 7th	0·96	12	0·34	on 14th	1·17	7	0·87	on 7th
February.	41·4	39·9	87·8	1·12	16	·46	,, 16th	1·052				1·02	12	·42	,, 16th	1·46	13	·59	,, 16th
March.	41·5	39·0	81·3	2·12	19	·42	,, 5th	2·093				1·86	18	·38	,, 5th	2·41	17	·52	,, 5th
April.	45·7	42·1	74·9	1·71	12	·34	,, 23rd	1·783				1·75	11	·35	,, 23rd	1·93	10	·41	,, 27th
May.	55·0	52·3	83·2	1·57	17	·38	,, 14th	1·585				1·39	10	·37	,, 2nd	1·53	9	·42	,, 14th
June.	60·8	55·6	76·2	0·98	5	·46	,, 16th	0·916		0·458	,, 16th	0·71	4	·41	,, 16th	0·87	4	·43	,, 16th
July.	64·0	59·0	73·2	2·15	11	·60	,, 16th	2·207				2·45	10	·71	,, 16th	2·54	10	·75	,, 16th
August.	62·6	57·4	71·4	2·63	13	·65	,, 31st	2·563				2·81	12	·69	,, 23rd	2·55	11	·79	,, 31st
September.	58·7	55·2	79·3	1·46	18	·43	,, 3rd	1·491				1·21	15	·40	,, 3rd	1·43	14	·43	,, 3rd
October.	56·3	54·5	87·9	2·64	17	1·03	,, 18th	2·565		1·060	,, 18th	2·47	10	·94	,, 18th	2·54	9	1·04	,, 18th
November.	47·8	45·7	84·4	1·42	16	·46	,, 21st	1·256				1·42	11	·49	,, 21st	1·37	8	·47	,, 21st
December.	42·0	40·8	90·6	3·55	22	·76	,, 13th	3·243		0·729	,, 13th	3·06	18	·72	,, 13th	3·51	17	·62	,, 13th
Totals.				22·37	181			21·713				21·11	143			23·31	129		
Averages for the year	51·1	47·8	80·8																

TABLE IV.

1908. Leap Year.	Bright Sunshine. By the Campbell-Stokes Recorder. Totals. Hours.	Per centage of possible amount.	Number of Sun-recorded Days.	Brightest Days. Date.	Hours.	Per centage of possible amount	Cloud. Average amount of cloud at 9 a.m., 1 to 10.
January.	91·4	35·4	25	12th	7·5	90·7	6
February.	93·2	32·4	25	2nd	7·8	84·4	7
March.	146·4	40·2	29	20th	9·9	81·8	6
April.	177·7	43·2	27	7th	12·3	92·8	6
May.	216·2	45·4	29	27th	13·5	84·6	6
June.	288·0	59·0	30	29th	15·4	93·9	5
July.	235·7	48·2	31	2nd	14·5	88·6	6
August.	255·4	57·5	30	3rd	13·5	89·0	5
September.	153·6	36·8	29	7th	11·8	89·9	6
October.	137·5	42·2	28	1st & 2nd	10·1	87·0, 87·8	6
November.	106·9	40·6	26	8th & 9th	8·4	90·5, 91·0	6
December.	57·0	23·7	16	7th	6·6	81·9	7
Totals.	1959·0	44·3	325				